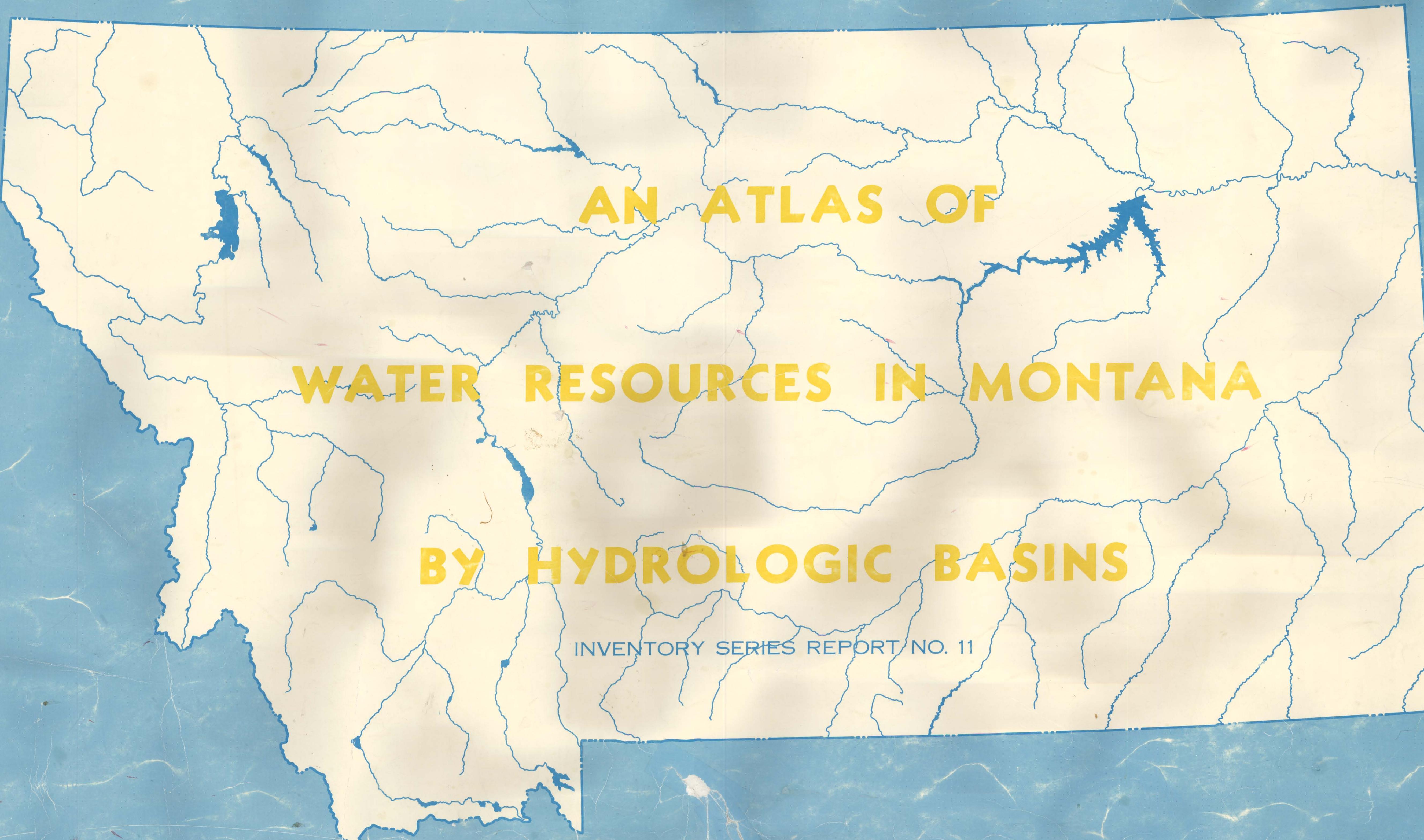


*"A Comprehensive Water and Related Land Resources Plan
for the State of Montana"*



MONTANA WATER RESOURCES BOARD
Sam W. Mitchell Building
Helena, Montana

MONTANA WATER RESOURCES BOARD



SAM W. MITCHELL BUILDING
HELENA, MONTANA
59601

GOVERNOR FORREST H. ANDERSON, CHAIRMAN

WILBUR WHITE, VICE CHAIRMAN AND SECRETARY, TWODOT
HOMER C. BAILEY, CORVALLIS
CLYDE HAWKS, ST. XAVIER



DOUGLAS G. SMITH, DIRECTOR, HELENA
EVERETT REDEEN, FORSYTH
FRED E. BARRETT, CHESTER

*"A Comprehensive Water and Related Land Resources Plan
for the State of Montana"*

INVENTORY SERIES REPORT NO. 11

AN ATLAS OF WATER RESOURCES IN MONTANA BY HYDROLOGIC BASIN

FOREWORD

This publication, prepared by the Montana Water Resources Board, is the eleventh in a statewide water planning series which the Board will publish utilizing funds provided by Montana's 1967 legislature together with funds obtained from the Federal Water Resources Council under Public Law 89-80. It is an inventory of surface water resources and projects which form an integral part of the inventory phase of development of the state water plan.

The data contained herein will help to lay the foundation necessary for future studies and will present a map scale upon which all future work can be based so uniform material collection and compilation will be possible. Further, it is hoped that the material will prove of interest and utility to all who are interested in water and land resources development in the state.

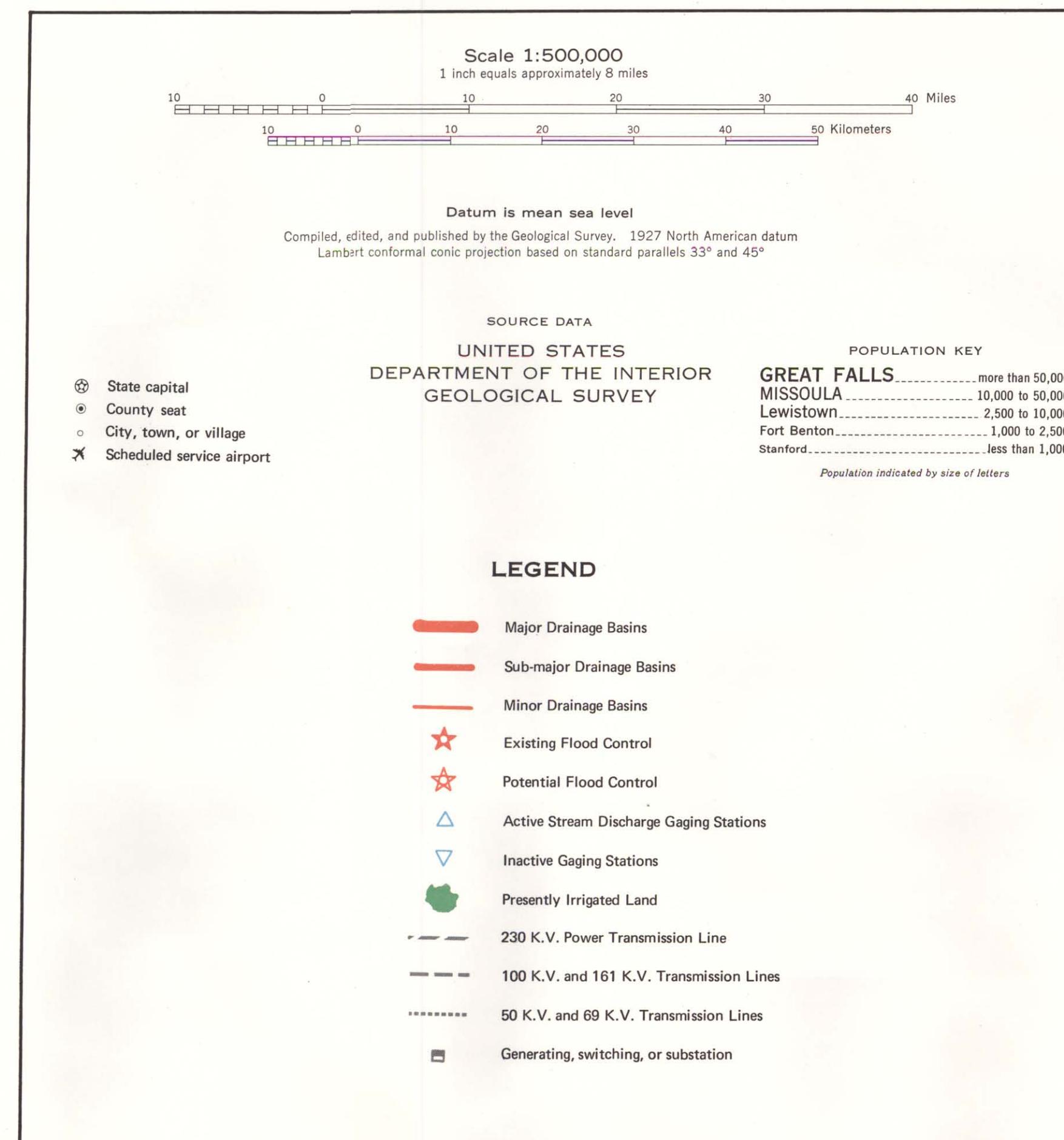
The Montana Water Resources Board wishes to express appreciation to the following organizations who made available to the Board much of the information found in this atlas:

Montana Highway Commission
State Fish and Game Department
U. S. Bureau of Reclamation
U. S. Geological Survey
Soil Conservation Service
Montana Power Company
U. S. Army Corps of Engineers

DOUGLAS G. SMITH

Director

Montana Water Resources Board



INTRODUCTION

The Montana Water Resources Board, in preparing a state water plan, has compiled an inventory of surface water resources and prepared this atlas of drainage basin maps showing some of these resources in relation to one another throughout the State of Montana.

Montana is the headwaters of three major continental drainage basins. The smallest basin which contains less than one percent of the state's total land area, is the Hudson Bay drainage located in northwestern Montana; this includes the St. Mary, the Waterton and Belly Rivers which flow northward into Hudson Bay. West of the continental divide is the Columbia basin which flows into the Pacific Ocean and contains approximately twenty percent of the state's total land area. Major tributaries of the Columbia River are the Clark Fork, Flathead, and Kootenai Rivers. About eighty percent of the state's total land area is east of the continental divide in the Missouri River drainage which flows to the Mississippi River and into the Gulf of Mexico. The major tributaries to the Missouri River in Montana are the Milk and Yellowstone Rivers.

In an effort to aid in data gathering for the state water plan, the state was divided into six major drainage basins based upon those streams which flow out of the state and do not re-enter the state again: the Kootenai, Clark Fork, Flathead and Kootenai River basins in the Columbia River drainage; the Upper Missouri tributaries, Missouri-Smith, Missouri-Sun-Marias, Missouri-Musselshell, Milk, and Missouri-Fort Peck basins in the Missouri River drainage; the Upper Yellowstone, Middle Yellowstone, and Lower Yellowstone River basins in the Yellowstone drainage; the St. Mary River basin in the Hudson Bay drainage; and the Little Missouri River basin.

These six major drainage basins are subdivided into fifteen sub-major drainage basins consisting of the Upper Clark Fork, Lower Clark Fork, Flathead and Kootenai River basins in the Columbia River drainage; the Upper Missouri tributaries, Missouri-Smith, Missouri-Sun-Marias, Missouri-Musselshell, Milk, and Missouri-Fort Peck basins in the Missouri River drainage; the Upper Yellowstone, Middle Yellowstone, and Lower Yellowstone River basins in the Yellowstone drainage; the St. Mary River basin in the Hudson Bay drainage; and the Little Missouri River basin.

The fifteen sub-major drainage basins have been further divided into eighty-five minor drainage basins representing the minor tributaries within the state. These eighty-five minor basins are shown on a statewide scale on page two and throughout the atlas by sub-major drainage basin at a scale of 1:500,000.

The basis for the drainage subdivisions, and the code used to represent these subdivisions, is the Office of Water Data Coordination, U. S. Department of the Interior, Geological Survey atlas of stream gaging stations. Several modifications have been made which do not significantly change any of the OWDC basins.

The atlas includes twelve maps showing the fifteen sub-major drainage basins with two of these maps showing more than one of the drainage basins on one map page. The maps show culture in black, power lines in grey, and streams and stream names in blue. The major, sub-major, and minor drainage basin boundary lines are shown in three significant widths of red lines. Existing and proposed flood control projects are located by red stars with open stars representing potential projects while closed stars designate existing projects. Blue triangles represent U.S.G.S. stream discharge gaging stations with righted triangles representing stations active as of January 1, 1970, and inverted triangles representing those stations, used in the past, but now discontinued. Green areas on the maps represent presently irrigated land according to the county-wide surveys being conducted by the water resources survey division, Montana Water Resources Board.

The last two maps in the atlas are prepared by the Montana Water Resources Board staff from information supplied by cooperating agencies.

The first map is prepared through joint effort of the Water Board and the Montana Fish and Game Department. Shows in green the fishing access sites, state parks and monuments, and state recreation areas maintained by the Fish and Game Department throughout the state. An index to this map provides the proper names of each of these sites as of January 1, 1970.

The last map in the atlas shows mountain precipitation by colored isohyet lines representing increments of annual precipitation above 20 inches. This map was prepared in cooperation with the Soil Conservation Service and the National Weather Service.



KOOTENAI

76B Yaak River
76C Fisher River
76D Kootenai River

FLATHEAD

76I Middle Fork Flathead River
76J South Fork Flathead River
76K Swan River
76K Flathead River to and including Flathead Lake

UPPER CLARK FORK

76E Rock Creek
76F Blackfoot River
76G Clark Fork above Blackfoot River
76H Flint Creek
76H Bitterroot River

LOWER CLARK FORK

76L Flathead River below Flathead Lake
76M Clark Fork between Blackfoot River and Flathead River
76N Clark Fork below Flathead River

ST. MARY

40T Hudson Bay Drainage (Part 5)

UPPER MISSOURI TRIBUTARIES

41A Red Rock River
41B Beaverhead River
41C Ruby River
41D Big Hole River
41E Beaver River
41F Madison River
41G Jefferson River
41H Gallatin River

MISSOURI-SMITH

41I Missouri River above Holter Dam
41J Smith River
41Q Missouri River from Holter Dam to the Sun River
41U Dearborn River

MISSOURI-SUN-MARIAS

41K Sun River
41L Cut Bank Creek
41M Two Medicine Creek
41N Willow Creek
41O Teton River
41P Marias River
41Q Missouri River from Sun River to Marias River

MISSOURI-MUSSHEL

40A Musselshell River above Roundup
40B Flattwillow Creek including Box Elder Creek
40C Musselshell River below Roundup
41R Arrow Creek
41S Judith River

40T Missouri River from Marias River to and including Bullwhacker Creek
40EJ Missouri River between Bullwhacker Creek and Musselshell River

MILK

40F Milk River above Fresno Reservoir
40H Big Sandy Creek
40I Peoples Creek
40J Milk River between Fresno Reservoir and Whitewater Creek
40K Whitewater Creek
40L Frenchman Creek
40M Beaver Creek
40N Rock Creek
40O Milk River below Whitewater Creek including Porcupine Creek

MISSOURI-FORT PECK

40D Dry Creek
40E Missouri River between Musselshell River and Fort Peck Dam
40F Redwater River
40Q Poplar River
40R Big Muddy Creek
40S Missouri River below Fort Peck Dam

LITTLE MISSOURI

39E Box Elder Creek
39F Little Missouri River above Little Beaver Creek
39FJ Little Beaver Creek
39G Beaver Creek
39H Little Missouri below Little Beaver Creek
38H Belle Fourche River above Cheyenne River

UPPER YELLOWSTONE

43A Shields River
43B Yellowstone River above and including Bridger Creek
43B Boulder River
43B Sweet Grass Creek
43B Stillwater River
43D Clarks Fork Yellowstone River
43Q Yellowstone River from Bridger Creek to the Clarks Fork Yellowstone

MIDDLE YELLOWSTONE

43E Pryan Creek
43N Shoshone River
43O Little Bighorn River
43P Bighorn River below Greybull River
43Q Yellowstone River between Clarks Fork Yellowstone and Bighorn River
42A Rosebud Creek
42B Tongue River above and including Hanging Woman Creek
42C Tongue River below Hanging Woman Creek
42K Yellowstone River between Bighorn River and Tongue River

LOWER YELLOWSTONE

42I Little Powder River
42J Powder River below Clear Creek
42K Yellowstone River between Tongue and Powder River
42L O'Fallon Creek
42M Yellowstone River below Powder River

